

Claim Amendments

1. (currently amended) A gas service riser assembly comprising: an outer ductile pipe; a plastic pipe having open ends disposed within ~~said~~ the outer ductile pipe and extending through one end thereof; a hollow rigid stiffener including a plurality of radial serrations having outwardly extending sharp points formed along the outside length thereof disposed within the interior of a the upper open end portion of ~~said~~ the plastic pipe within ~~said~~ the outer ductile pipe, the stiffener including a flange at the upper end thereof above and adjacent to the plastic pipe that extends into close proximity with the outer pipe; a gasket positioned around the exterior of ~~said~~ the plastic pipe adjacent to ~~said~~ the stiffener; and a crimp formed in ~~said~~ the outer ductile pipe adjacent to ~~said~~ the gasket and the stiffener and said gasket immediately below the flange of the stiffener whereby ~~said~~ the outer ductile pipe is compressed against ~~said~~ the gasket, ~~said~~ the plastic pipe and ~~said~~ the stiffener to thereby form a seal between ~~said~~ the plastic pipe and ~~said~~ the ductile outer pipe.

2. (currently amended) The riser assembly of claim 1 which further comprises:
a second gasket positioned around the exterior of ~~said~~ the plastic pipe within ~~said~~ the end of ~~said~~ the outer ductile pipe through which ~~said~~ the plastic pipe extends; and

a second crimp formed in ~~said~~ the outer ductile pipe adjacent to ~~said~~ the second gasket to thereby form a second seal between ~~said~~ the plastic pipe and ~~said~~ the ductile outer pipe.

3. (currently amended) The riser assembly of claim 1 wherein ~~said~~ the outer ductile pipe is a metal pipe.

4. (currently amended) The riser assembly of claim 1 wherein ~~said~~ the outer ductile pipe is a steel pipe.

5. (currently amended) The riser assembly of claim 1 wherein ~~said~~ the outer ductile pipe is metal tubing.

6. (currently amended) The riser assembly of claim 1 wherein ~~said~~ the outer ductile pipe is steel tubing.

7. (currently amended) The riser assembly of claim 1 wherein ~~said~~ the hollow rigid stiffener is formed of metal.

8. (currently amended) The riser assembly of claim 1 wherein ~~said~~ the radial serrations having outwardly extending sharp points formed along the outside length of ~~said~~ the stiffener extend toward the open end of ~~said~~ the plastic pipe within ~~said~~ the outer ductile pipe.

9. (canceled).

10. (currently amended) A gas service riser assembly comprising: an outer ductile metal pipe having open ends with a portion thereof adapted to extend below ground; a plastic pipe having open ends, the upper open end being positioned within ~~said~~ the above ground portion of ~~said~~ the outer pipe with ~~said~~ the plastic pipe extending through the below ground portion of the outer pipe and through the open end thereof; a hollow rigid metal stiffener including a plurality of radial serrations having outwardly extending sharp points formed along the outside length thereof disposed within ~~said~~ the interior of the upper open end portion of ~~said~~ the plastic pipe within the outer ductile pipe, the stiffener including a flange at the upper end thereof above and adjacent to the plastic pipe ~~having a flange~~ that extends radially outwardly from ~~said~~ the plastic pipe to a position adjacent to the ~~near said~~ outer ductile pipe; a gasket positioned around the exterior of ~~said~~ the plastic pipe adjacent to ~~said~~ the stiffener; a cylindrical crimp formed in ~~said~~ the outer pipe adjacent to ~~said~~ the gasket and ~~said~~ the stiffener ~~and said gasket~~ immediately

below the flange of the stiffener whereby ~~said~~ the outer pipe is compressed against ~~said~~ the gasket, ~~said~~ the plastic pipe and ~~said~~ the stiffener to thereby form a seal between ~~said~~ the plastic pipe and ~~said~~ the outer pipe; a second gasket positioned around the exterior of ~~said~~ the plastic pipe within ~~said~~ the below ground open end of ~~said~~ the outer pipe; and a second cylindrical crimp formed in ~~said~~ the outer pipe adjacent to ~~said~~ the second gasket to thereby form a second seal between ~~said~~ the plastic pipe and ~~said~~ the outer pipe.

11. (currently amended) The riser assembly of claim 10 wherein ~~said~~ the outer ductile metal pipe is a steel pipe.

12. (currently amended) The riser assembly of claim 10 wherein ~~said~~ the outer ductile metal pipe is steel tubing.

13. (currently amended) The riser assembly of claim 10 wherein ~~said~~ the hollow rigid metal stiffener is formed of steel.

14. (currently amended) The riser assembly of claim 10 wherein ~~said~~ the radial serrations having outwardly extending sharp points formed along the outside length of ~~said~~ the stiffener extend toward the open end of ~~said~~ the plastic pipe within ~~said~~ the outer ductile pipe.

15. (currently amended) The riser assembly of claim 10 wherein ~~said~~ the gasket positioned around the exterior of ~~said~~ the plastic pipe adjacent to ~~said~~ the stiffener is a rubber gasket.

16. (currently amended) The riser assembly of claim 10 wherein ~~said~~ the second gasket is a rubber gasket.

17. (currently amended) The riser assembly of claim 10 wherein ~~said~~ the open end of ~~said~~ the outer pipe above ground is adapted to be connected to a gas meter.

18. (currently amended) The riser assembly of claim 10 wherein ~~said~~ the open end of ~~said~~ the plastic pipe below ground is adapted to be connected to a source of gas.

19. (currently amended) A ductile pipe to plastic pipe transition connection comprising: an outer ductile pipe; a plastic pipe disposed within ~~said~~ the outer ductile pipe; a hollow rigid stiffener including a plurality of radial serrations having outwardly extending sharp points formed along the outer length thereof disposed within the interior of ~~said~~ the open end portion of ~~said~~ the plastic pipe within the outer ductile pipe, the stiffener including a flange at the end thereof adjacent to the plastic pipe that extends radially outwardly from the plastic pipe to a position adjacent to the outer ductile pipe; a gasket positioned around the exterior of ~~said~~ the plastic pipe adjacent to ~~said~~ the stiffener; and a crimp formed in ~~said~~ the outer ductile pipe adjacent to ~~said~~ the gasket and ~~said~~ the stiffener ~~and said gasket~~ next to the flange of the stiffener whereby ~~said~~ the outer ductile pipe is compressed against ~~said~~ the gasket, ~~said~~ the plastic pipe and ~~said~~ the stiffener to thereby form a seal between ~~said~~ the plastic pipe and ~~said~~ the ductile pipe.

20. (currently amended) The transition connection of claim 19 wherein ~~said~~ the outer ductile pipe is a metal pipe.

21. (currently amended) The transition connection of claim 19 wherein ~~said~~ the outer ductile pipe is a steel pipe.

22. (currently amended) The transition connection of claim 19 wherein ~~said~~ the outer ductile pipe is metal tubing.

23. (currently amended) The transition connection of claim 19 wherein ~~said~~ the outer ductile pipe is steel tubing.

24. (currently amended) The transition connection of claim 19 wherein ~~said~~ the hollow rigid stiffener is formed of metal.

25. (currently amended) The transition connection of claim 19 wherein ~~said~~ the radial serrations ~~having~~ have outwardly extending sharp points formed along the outside length of ~~said~~ the stiffener extend toward the open end of ~~said~~ the plastic pipe within ~~said~~ the outer ductile pipe.

26. (canceled).

New Arguments

In the final rejection mailed on October 21, 2004, the Examiner rejected claims 1, 3-9 and 19-26 under 35 U.S.C. § 103(a) as being unpatentable over the Anderson et al. patent in view of the Hall patent. In addition, the Examiner rejected claims 2 and 10-18 under 35 U.S.C. § 103 as being unpatentable over Anderson et al. in view of Hall and further in view of the Alewitz patent.

The patent to Anderson et al. is directed to a gas service connector comprising a variety of parts, some of which are an outer pipe 30, an epoxy resin 68, a plastic tubing 26 and a stiffener 52. The Examiner stated that Anderson et al. discloses a stiffener that includes a plurality of radial serrations for gripping the interior of the plastic pipe, but Anderson et al. does not disclose serrations having sharp points formed along the outside length thereof. It is respectfully submitted by the Applicant that Anderson et al. does not disclose a stiffener that includes a plurality of radial serrations. Instead, the stiffener of Anderson et al. includes round ribs formed by circular indentations. Further, while Anderson et al. includes a stiffener with a flange, the flange is not adjacent to the crimp in the outer pipe whereby the stiffener cannot move downwardly.

The Examiner further stated that while Anderson et al. does not disclose serrations having sharp points, Hall teaches supplying serrations with sharp points extending toward the open end of the plastic pipe. It is respectfully submitted by the Applicant that while the retainer sleeve 30 of Hall has numerous serrations 34 including a groove 36 containing an O-ring seal, Hall does not state that the serrations have sharp points.

In addition, Hall does not simultaneously crimp the outer metal tube, a gasket, the plastic pipe and a stiffener all positioned side by side as is done in accordance with the present invention. Instead, Hall crimps an elastomer band around a transition sleeve 30 the lower smaller end of which is not crimped, but instead is previously inserted into the plastic pipe and a compression band is compressed to form a seal between the retainer sleeve and the plastic pipe. The plastic pipe and the retainer sleeve are then placed in the outer metal tube.

As concerns the patent to Alewitz, Alewitz discloses a gas riser apparatus which includes multiple crimps at the top and at the bottom of the metal tube. It is respectfully submitted by the Applicant that Alewitz does not disclose or suggest a bottom crimp similar to the present invention as shown in FIG. 5.

Independent claims 1, 10 and 19 of the present application call for a gas service riser assembly comprised of only an outer ductile pipe, a plastic pipe having open ends, a hollow rigid stiffener having outwardly extending sharp points formed along the outside length thereof, a gasket and a crimp formed in the outer ductile pipe. When crimped, the outer ductile pipe is compressed against the gasket, the plastic pipe and the stiffener to thereby form a seal between the plastic pipe and the ductile outer pipe.

The stiffener includes a flange at the upper end thereof above and adjacent to the plastic pipe that extends into close proximity with the outer pipe. The crimp in the outer pipe is positioned immediately below the flange of the stiffener whereby the stiffener and plastic pipe connected thereto cannot move downwardly.

The gas service riser assembly of this invention has fewer parts than the riser assemblies of the prior art and it is easier and more economical to produce than the prior art riser assemblies.

The appropriate standard for obviousness is whether “the prior art would have suggested to one of ordinary skill in the art that the process (or apparatus) should be carried out and would have a reasonable likelihood of success.” In re Dow Chemical Co. vs. American Cyanamid Co., 837 F.2d 469, 473, 5 USPQ 2d 1529, 1531-32 (Fed. Cir. 1988). Nothing in the Anderson et al., Hall or Alewitz patents suggest to the skilled artisan that only the four or five parts utilized in accordance with the present invention should or could be utilized to produce a gas service riser assembly, or that the stiffener should or could utilize a plurality of radial serrations having outwardly extending sharp points along the length thereof, or that the stiffener includes a flange at the upper end thereof which extends into close proximity with the outer pipe, or that a cylindrical crimp is formed in the outer pipe immediately below the flange of the stiffener thereby preventing the plastic pipe from pulling out of the outer pipe.

It is respectfully submitted by the Applicant that a prima facie case of obviousness has not been established by the Anderson et al., Hall or Alewitz patents taken alone or together, and as a result amended claims 1-8 and 10-25 should now be allowed.

This is intended to be a complete response to the Office Action mailed on October 21, 2004.

I hereby certify that this correspondence is being deposited in the United States Postal Service as first class mail in an envelope addressed to: Box RCE, Commissioner for Patents, Post Office Box 1450, Alexandria, Virginia 22313-1450.

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